

Appl. No. 10/816,302

Amdt. dated December 23<sup>rd</sup>, 2005

Reply to Office Action of 26 Nov. 2005

**Amendment to the Claims:** the following claims should be amended as follows:

7. **(amended)** A motor positioning servo loop comprising:

a microcontroller device;

a digital to analog converter, having a digital input and an analog output,  
said digital input receiving digital signal from said microcontroller  
device and said analog output coupled to a motor actuator;

a motor coupled to said motor actuator;

a detecting device, having a digital output, said digital output coupled to  
said microcontroller;

wherein said detecting device detects a physical parameter comprising at  
least one member of the group consisting of position, velocity and  
acceleration;

wherein said motor actuator receives an analog signal from said digital to  
analog converter and delivers electrical energy to said motor;

wherein said digital to analog converter is an oversampling digital to  
analog converter, comprising a digital oversampling modulator, whose  
output signal is a bitstream analog signal, and

whereby said microcontroller receives a commanding digital signal from a  
commanding source and a feedback digital signal from said digital  
output of said detecting device and processes the digital data to drive  
said motor actuator in response to said commanding digital signal and  
said feedback digital signal to control said physical parameter.

13 **(amended)** A method for achieving accurate control of the physical  
parameters of a system, by means of a motor positioning servo loop  
comprising:

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measuring the value of said physical parameters of said system;  
generating a motor control servo signal responsive to the difference  
between said value of said physical parameters of said system and a  
desired value;  
generating an oversampled bitstream analog signal responsive to said  
motor control servo signal;  
controlling said system by means of driving a motor in response to said  
oversampled bitstream analog signal; of position, velocity,  
acceleration, and pressure[, temperature and illumination]; and  
whereby the [noise] resolution and dynamic range of said motor  
positioning servo loop is [reduced] increased by means of noise  
shaping of said oversampled bitstream analog signal.

**A complete listing of all pending claims is attached.**